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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Response to Arguments

1. Regarding the 112, 2nd paragraph rejection of claims 15-20 and 24, the applicants argue that as would be apparent to one skilled in the art reading the present disclosure, the wettability of applicants' composite is what allows them to thrive in the molten electrolytes of the molten electrochemical fuel cell described in the present application. The examiner disagrees because nowhere in the specification of the present application is disclosed that the composites are inherently wettable.

2. Regarding the 103 rejections of claims 1-5 and 12-14, the applicant's arguments on page 15 of the Remarks have been fully considered and are persuasive. Therefore, the 103 rejections of claims 1-5 and 12-14 are withdrawn.

3. The applicant argues that the method of preparation of the applicant's monolith and fuel as well as the finished product is not disclosed or suggested in Petricevic. As previously stated, the examiner contends that the fuel that is formed in the finished product is inherently formed by the pyrolysis step. By definition, pyrolysis is the chemical decomposition of organic materials by heating in the absence of oxygen. In fact, the applicant discloses in the specification of the present application that in general, "pyrolyzing plastics causes the plastics to thermally decompose and produce carbon chars". Both the applicant's finished product and Petricevic's finished product are formed from the same precursor of resorcinol and formaldehyde which further proves that chars will be formed during the Petricevic's pyrolysis step. Therefore, the

examiner maintains the assertion that chars are necessarily formed during Petricevic's pyrolysis step.

4. The applicant also argues that Petricevic fails to disclose performing pyrolysis in the presence of any of the listed materials in claim 14. The examiner disagrees because Petricevic et al discloses adding sodium carbonate to the precursor of resorcinol and formaldehyde. Therefore, it is contended by the examiner that the sodium carbonate is still remaining in the composite gel during the pyrolysis step since it is used only as a catalyst.

5. The applicant also argues that nowhere does Petricevic teach or suggest that the disclosed structures are suitable for use as an anode with wettable chars being fuel capable of being combusted in a molten salt electrochemical fuel cell in the range from 500C to 800C to produce electrical energy. The applicant further argues that the most obvious difference between the two products is that the applicant's product is wettable and Petricevic product is hydrophobic.

- Firstly, the arguments that the applicant's product has to be wettable are not commensurate with the scope of the claims because the claims do not require that the finished product or the chars are wettable. Nowhere in the specification of the present application is disclosed that the final product or the chars are wettable. Therefore, the limitations of wettable aerogel/carbon composite or wettable xerogel/carbon composite are not supported by the specification.

- Secondly, the applicant tries to show the criticality of the hydrophobicility of the Petricevic product by using the US Patent No. 6,503,655 to Petricevic et al. However, there is no evidence to show that the product disclosed in US Patent 6,503,655 is the same as the product disclosed in Petricevic et al ("Planar fibre reinforced carbon aerogel for application in PEM fuel cells", Carbon, vol. 39, no. 6, May 2001, pg. 857-867).
- Thirdly, there is no evidence to show that the product disclosed by Petricevic is entirely hydrophobic. In fact, many of the materials used for reinforcing the carbon aerogel are hydrophilic as described in section 3.2. In addition, it is contended by the examiner that even if the Petricevic carbon aerogel is hydrophobic in water, it will be wettable in a molten salt environment at high temperatures.

6. Lastly, there is no evidence to show that the reinforced carbon aerogel taught by Petricevic cannot be used as an anode with wettable chars being fuel capable of being combusted in a molten salt electrochemical fuel cell in the range from 500C to 800C to produce electrical energy. Since the claims do not require a molten salt fuel cell, the examiner maintains the assertion that the Petricevic carbon aerogel is capable of being used as an anode in a molten salt fuel cell based upon the facts stated above.

TC

/Jonathan Crepeau/

Primary Examiner, Art Unit 1795